



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,045	06/24/2003	Alvin Jose Joseph	BUR920030004US1	1044
21918	7590	11/24/2004	EXAMINER	
DOWNS RACHLIN MARTIN PLLC			NGUYEN, TUAN H	
199 MAIN STREET			ART UNIT	
P O BOX 190			PAPER NUMBER	
BURLINGTON, VT 05402-0190			2813	

DATE MAILED: 11/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/604,045	Applicant(s) JOSEPH ET AL.	
	Examiner Tuan H. Nguyen	Art Unit 2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 12-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election of group I, claims 1-11 in the reply filed on 11/5/04 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Miwa'617.

See Miwa, figs. 3A-3G and text on col. 4, line 54 to col. 6, line 62 for teaching the claimed bipolar transistor including a substrate 40 having collector 53C connected to a collector region; an emitter 82 spaced from the collector region; a base 84 of tungsten silicide (cl. 5, step D) having a first portion located between the substrate 40 and the emitter 82 and a second portion surrounding the first portion, the base including a first conductor 84 located within the first and second portions and having substantially the same conductance (figs. 3-4).

With respect to claims 2, 8, the base comprises at least one epitaxial layer 52.

Art Unit: 2813

With respect to claim 3, fig. 3F shows the emitter 82 includes an upper portion distal from the substrate (lateral portion that forms an overlap region with respect to the substrate) and a lower portion (vertical portion) located between the upper portion and the collector, the second portion of the base 84 being located between the upper portion of the emitter 82 and the substrate.

With respect to claims 5, 6, 10, 11, since there is no distinction between the second conductor and first conductor; therefor, a second conductor is considered as a portion of the first conductor 84 of W_{Si} contained only in the second portion of the base.

Claims 1-3, 5, 7-8, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Harame.

Harame, figs. 1-9 and text on col. 3-7 discloses the claimed bipolar transistor device including a substrate 10 having a collector 14 formed therein; an emitter 40 spaced from the collector 14; a base having a first portion located between the substrate 10 and the emitter 40 and a second portion surrounding the first portion, the base including a first conductor 24 located within the first and second portions and having substantially the same conductance. The emitter 40 includes an upper portion distal from the substrate (lateral portion that forms an overlap region with respect to the substrate) and a lower portion (vertical portion) located between the upper portion and the collector, the second portion of the base 24 being located between the upper portion of the emitter 40 and the substrate. (fig. 1A).

With respect to claims 2, 8, col. 4, second paragraph discloses the formation of epitaxial base layer 32 as shown in fig. 1.

With respect to claims 5, 10, since there is no distinction between the second conductor and first conductor; therefor, a second conductor is considered as a portion of the first conductor 24 contained only in the second portion of the base.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 6, 9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harame et al..

Harame, figs. 1-9 and text on col. 3-7 discloses substantially the claimed bipolar transistor, as explained above except the use of silicide for forming base layer 24.

However, on col. 3, last paragraph, and col. 6, first paragraph, Harame teaches the use of either polysilicon, refractory metal or polycide for forming first conductor layer 24.

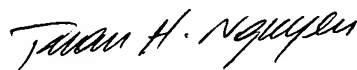
It would have been obvious to one having ordinary skill in the art at the time the invention was made to have replaced polysilicon with silicide for forming base layer 24 since the substitution of art recognized equivalence as suggested by Harame are within level of those skilled in the art.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Miwa'861 discloses the use of tungsten silicide for forming base (fig. 4 and col. 6, first paragraph) extending both inside and outside the overlap emitter region 13.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan H. Nguyen whose telephone number is 571-272-1694. The examiner can normally be reached on 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Tuan H. Nguyen
Primary Examiner
Art Unit 2813